8.14 Water Resources

The affected environment of the Tracy Peaker Project (TPP) is described in terms of regional water resources and the identified water supply. The potential impacts to surface water or groundwater that could result from the TPP are described for the San Joaquin County area. Cumulative and indirect impacts and mitigation measures are also addressed below. Finally, the laws, ordinances, regulations, and standards (LORS) that apply to the use and conservation of water resources are presented.

8.14.1 Affected Environment

GWF Energy LLC proposes to build and operate the Tracy Peaker Project (TPP), a nominal 169-megawatt (MW) simple-cycle power plant, on a nine-acre, fenced site within a 40-acre parcel in an unincorporated portion of San Joaquin County. The site is located immediately southwest of Tracy, California, and approximately 20 miles southwest of Stockton, California. The TPP would consist of the power plant, an onsite 230-kilovolt (kV) switchyard, an approximately five-mile, 230-kV electric transmission line, an approximately 1,470-foot water supply pipeline (as measured from the fence line), an onsite natural gas supply interconnection, and improvements to an existing dirt access road approximately one mile in length. An approximately 5.2-acre area west of the plant fence line and within the 40-acre parcel would be used for construction laydown and parking. Figure 2-1 shows the regional location of the GWF site. Figure 2-2 shows the immediate site location of the GWF project, including the location of the proposed generating facility and the proposed transmission, water supply, and access routes.

The proposed facility would be constructed on agricultural property. The area immediately surrounding the site is predominantly used for agricultural and industrial purposes. The Owens-Brockway glass container manufacturing facility is directly north of the Union (Southern) Pacific Railroad tracks, and the Tracy Biomass power plant is just north of Owens-Brockway.

8.14.1.1 Regional Water Resources

Climate and Precipitation. The Tracy area is arid to semiarid, with hot summers and mild winters. Most of the yearly precipitation falls between the months of October and May. Table 8.14-1 lists the average monthly maximum temperatures, the average monthly minimum temperatures, and the average monthly rainfall recorded at the Tracy Carbona weather station from 1927 through 2000. Average annual rainfall is 9.99 inches.

Regional Water Use and Supply. Groundwater and surface water are used to meet water needs in San Joaquin County. Total annual water use in the county is 1,626,000 acre-feet (530 billion gallons). Approximately 50 to 60 percent of the total use is from groundwater; the remainder comes from surface water supplies, which include the San Joaquin River, the Central Valley Project, and the State Water Project (Nategawa, 2001). In 1999, the Delta-Mendota Canal, which is part of the federal Central Valley Project, delivered over 7 billion gallons of water to San Joaquin County, including over 2.3 billion gallons to the city of Tracy (Martin, 2001).

Geologic Setting and Groundwater. The TPP site is located within the southern two-thirds of the Central Valley aquifer system, which underlies a portion of San Joaquin County. This aquifer system is made up of post-Eocene continental rocks and deposits, which contain most of the fresh water in the valley. Below the continental deposits are tertiary marine sediments that contain mostly saline water, except in certain areas where an influx of fresh water has flushed out the saline water.

The aquifer system in the lower San Joaquin Valley generally consists of an upper and a lower aquifer, which are separated by a relatively thick clay layer of regional extent called the Corcoran Clay member of the Tulare Formation (shown as E-clay on Figure 8.15-5). Several of these clay beds were deposited in a lake that once occupied the San Joaquin Valley trough. The Corcoran Clay is part of the modified E-clay in the San Joaquin Valley; it is located approximately 450 feet below ground surface (bgs) and is approximately 50 to 100 feet thick. The Corcoran Clay is silty, diatomaceous clay with low permeability and is one of the largest confining bodies in the region, underlying an area of approximately 5,000 square miles. In general, clay zones are impermeable aquitards that restrict vertical and lateral movement of

groundwater. Movement of groundwater through soil can be retarded or terminated by aquitards.

Although the Corcoran Clay is believed to be a competent barrier between the upper and the lower aquifers in the southern sections of the San Joaquin Valley, the Corcoran Clay pinches out and begins to disappear as it moves north toward the TPP site. Where the Corcoran Clay disappears, the lower aquifer is no longer isolated from the upper aquifer. The absence of the Corcoran Clay allows the regional groundwater flow to be affected by numerous lenses of fine-grained materials that are distributed throughout the aquifer. These fine-grained lenses have a combined thickness of several thousand feet.

Surface Water. The TPP site is located within the San Joaquin Basin, which includes the San Joaquin Valley, the eastern slope of the Coast Ranges, and the western slope of the Sierra Nevada. Surface water is used within the basin primarily for municipal, agricultural, and industrial purposes.

The principal streams in the basin are the San Joaquin River and its larger tributaries: the Cosumnes, Calaveras, Mokelumne, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major reservoirs include Pardee, New Hogan, Millerton, McClure, Don Pedro, and New Melones. Runoff from the Sierra Nevada and Coast Ranges supplies the San Joaquin River with fresh surface water before eventually flowing out to the Sacramento–San Joaquin Delta. The TPP site is located approximately five miles southwest of the San Joaquin River.

In addition to the rivers, surface water is imported to the basin through several main canals via the State Water Project (SWP) and the federal Central Valley Project (CVP). These canals include the Delta-Mendota Canal (CVP) and the California Aqueduct (SWP). The Delta-Mendota Canal and California Aqueduct carry fresh water from the Sacramento and San Joaquin River systems and groundwater from various wells throughout the region to a network of local canals and irrigation ditches. These sources provide water to agricultural lands as well as cities and industries throughout the central San Joaquin Valley region. Approximately 38 percent of the surface water supplied to the lower San Joaquin Valley is imported from the Sacramento–San Joaquin Delta through the Delta-Mendota Canal and the California Aqueduct

(USGS, 1998). Completed in 1951, the Delta-Mendota Canal carries water southeasterly from the Tracy Pumping Plant to the Mendota Pool, where it is used for irrigation along the west side of the San Joaquin Valley. The California Aqueduct is approximately one-quarter mile southwest of the proposed TPP site.

8.14.1.2 Water Supply for the Proposed Tracy Peaker Project

The Plain View Water District would supply the TPP site with water from the Delta-Mendota Canal. A 1,470-foot-long pipeline would be constructed to transport water from a turnout in the canal to the TPP site. The project does not include a cooling tower and would therefore have a minimal water demand. Average annual water consumption from the canal is approximately 29.5 acre-feet (9.6 million gallons), based on 8,000 hours of operation. The TPP site average daily flow rate is 20 gallon per minute (gpm).

Water at the site would be used for fire protection, evaporative cooling in the air intake (for power augmentation), and to wash the turbine compressor. The turbine compressor washwater would be treated with reverse osmosis and portable ion exchange bottles prior to use. Water for evaporative cooling would be treated by reverse osmosis only. Plant personnel would bring bottled water on site for domestic purposes.

Industrial wastewater and contact stormwater runoff from the plant would be stored in an onsite storage unit and eventually transported off site by truck (see Section 8.13.2.2 for more detail concerning wastewater disposal). Noncontact stormwater from the plant site would be channeled and directed to an onsite evaporation/percolation basin.

8.14.2 Environmental Consequences

This section evaluates the potential impacts of the TPP on various water resources, including groundwater, surface water use and storage, and the Delta-Mendota Canal water supply. Consistency with state water policy and power plant cooling water policy are also examined.

Consistent with the California Environmental Quality Act (CEQA) Guidelines, the TPP is determined to have a significant effect on the environment if it would :

- Substantially degrade water quality;
- Contaminate a public water supply;
- Substantially degrade or deplete groundwater resources;
- Interfere substantially with groundwater recharge;
- Encourage activities that result in the use of large amounts of water;
- Use water in a wasteful manner;
- Cause substantial flooding, erosion, or siltation; or
- Substantially diminish habitat for fish, wildlife, or plants.

Project-related impacts and their significance are described below. The cumulative and indirect impacts on water resources are discussed in Section 8.14.3. Figures 8.14-1a and 8.14-1b illustrate the water balance for the annual average and maximum daily cases under the TPP. Table 8.14-2 provides general water quality information for the Delta-Mendota Canal, the source proposed to supply TPP water.

Groundwater Impacts. The TPP is not expected to have an impact on local and regional groundwater. The TPP would not directly withdraw groundwater from the area. The onsite evaporation/percolation basin would contain noncontact stormwater. Therefore, the evaporation/percolation basin would not cause an impact on local and regional groundwater.

Impacts on Surface Water Use and Storage. Potential surface water impacts resulting from the TPP include the disruption of surface runoff patterns during the construction phase, and stormwater management requirements during the operations and maintenance phase.

During construction of the TPP, approximately nine acres would be disturbed at the TPP site, approximately 30 acres along the proposed transmission route, one acre for the proposed water line, and 5.2 acres for construction laydown and staging. The plant footprint and other disturbed areas, including the electric transmission line, would not encroach on the San Joaquin River or the California Aqueduct. Special procedures to be identified in the Stormwater Pollution Prevention Plan (SWPPP) developed for project construction would be implemented to prevent construction impacts on the Delta-Mendota Canal.

The TPP site generally slopes toward the northeast. Grading during construction of the TPP would alter existing drainage patterns on the site. Surface water runoff would be directed around the construction site to the maximum extent feasible to minimize excess erosion and pollutant loading. The drainage patterns of areas disturbed during the construction of the TPP linear facilities would be re-established after construction. Existing roadways would be used to the maximum extent possible; if additional roadways must be established, they would be sited and graded to minimize erosion and disturbance to runoff patterns. Best engineering management practices and drainage control would be implemented to minimize impacts from construction activities. A stormwater monitoring program would also be implemented for construction activities at the TPP site. In addition, erosion and sediment controls would be implemented in compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity and all other applicable LORS. These controls would be identified in the SWPPP to be prepared prior to the start of construction.

Following the completion of construction activity, contact stormwater (runoff from the equipment areas on the site) would be controlled and contained within the TPP site. Industrial wastewater from the plant area would be stored in an onsite holding tank and eventually transported off site via truck for disposal by a licensed hauler. The noncontact stormwater drainage system for the TPP site would be designed to accommodate runoff from a maximum 25-year, 24-hour rainfall event (2.0 to 2.1 inches) (Durfee, 2000). Drainage at the TPP site would be designed to prevent flooding of permanent facilities and roads. As a result of these features, no impacts to surface water quality due to local flooding are expected.

Facilities that do not discharge stormwater to designated "waters of the United States" do not require a permit under the General Permit for Discharges of Stormwater Associated with Industrial Activity. The stormwater runoff collected from outside bermed or graded stormwater collection areas (contact runoff) would be controlled through a stormwater collection system. The noncontact stormwater would be directed to an evaporation/percolation basin inside the facility fenceline. Because the noncontact runoff from the TPP would be discharged to an evaporation/percolation basin, the General Permit and associated monitoring and reporting requirements do not apply. The project site is not located within the 100-year

floodplain; Federal Emergency Management Agency floodplain maps for this area do not exist, and thus it is not an area of concern (Barkely, 2001).

Use of water from the Delta-Mendota Canal for the TPP would not adversely impact the Sacramento–San Joaquin Delta. Water is provided to the canal through a series of water rights agreements that would not be affected by the project. Water will be supplied to the TPP under an existing contract with the U.S. Bureau of Reclamation and would not represent a new demand on the system. The project would not alter the flow of surface or ground water into the Delta and would not impact Delta outflow or water quality objectives.

Impacts on the Delta-Mendota Water Supply. Process and firewater requirements for the TPP would be met by the Delta-Mendota Canal. A new water supply pipeline would be constructed to carry water from the Delta-Mendota Canal to the TPP site. The average annual water requirement for the TPP is estimated at 29.5 acre-feet (9.6 million gallons). With the purchase of the 40-acre site, GWF acquired the right to 136 acre-feet of water. GWF would also have access to 120 acre-feet of water from the Tracy Biomass facility as a backup source. The Tracy Biomass CVP water entitlement could be transferred to the TPP and delivery made via the Delta-Mendota Canal turnout.

Water from the canal would be supplied to the project under the Plain View Water District's contract with the U.S. Bureau of Reclamation for Delta-Mendota Canal water delivery. The Plain View Water District confirmed that it is able to supply the required amount of water to the TPP. Because an overdraft of water has been contracted out of the Delta-Mendota Canal, the full allocation for the TPP site may not be available every year. It is estimated that the Delta-Mendota Canal can only meet 50 to 60 percent of the contracted water demand south of the Delta during drought years. However, the contracted amount for the TPP site exceeds the projected plant requirement. Thus, with access to additional water from the Tracy Biomass facility, the plant's water needs would likely be met during drought years. Because water for TPP operation would be supplied under a pre-existing contract, the project would not exert an additional or new demand upon Delta-Mendota Canal water and is therefore not projected to cause a significant impact on canal water supply.

Consistency with State Water Policy. The volume of water that would be used for the TPP represents a small fraction of the current beneficial use of the state's inland waters. Conformance with state water policies and agreements is discussed below.

Power Plant Water Cooling Policy. The State Water Resources Control Board's (SWRCB) policy regarding power plant cooling water indicates preferences for the sources of cooling water (SWRCB, 1975). Before concluding that it is necessary to use surface water as cooling water for the TPP, GWF evaluated other potential sources of water, based on SWRCB policy, to determine whether these sources would be environmentally sound and economically feasible. The following cooling water alternatives were considered:

- Use of secondary wastewater from the City of Tracy wastewater treatment plant
- Drilling of an onsite supply well
- Use of wastewater from nearby industrial facilities
- Importing of wastewater streams from nearby communities
- Importing of ocean or brackish water
- Wet-dry cooling
- Dry cooling

All of these options were rejected as environmentally unacceptable, economically unsound, or both. In particular, concerns over the local and regional drawdown of the aquifer underlying the TPP site and the difficulty of providing for groundwater recharge to mitigate the project impact prevented the use of an onsite supply well. Several of the other options outlined above would have involved the construction of lengthy supply lines. As a result, these options are considered to be economically infeasible. The existing contract for water from the Delta-Mendota Canal and the proximity of the canal to the site renders the surface water option the most efficient and economical water source for the TPP.

8.14.3 Cumulative and Indirect Impacts on Water Resources

There are no current plans to construct additional industrial facilities in the project vicinity that would require substantial water supplies. Proposals for new facilities would undergo separate environmental review and any water resource impacts would be evaluated and mitigated.

8.14.4 Mitigation Measures

Though no significant adverse water resources impacts are expected to result from TPP construction and operation, GWF will implement mitigation measures to further minimize potential less-than-significant impacts to surface water. No impacts to groundwater have been identified, and thus no mitigation is required.

GWF will take actions during the construction and operation of the TPP to minimize impacts to water quality. These actions include the following:

WR-1. Project design and construction practices will minimize soil erosion during construction and operation of all TPP facilities. Implementing recommendations of the U.S. Natural Resource Conservation Service in Stockton and from the *California Stormwater Best Management Practice Handbook* will minimize soil erosion.

WR-2. In accordance with the SWPPP prepared for construction activity at the site, particular care will be taken to prevent any construction stormwater runoff from reaching the Delta-Mendota Canal.

WR-3. Contact stormwater from the TPP will be collected within bermed and confined areas, routed to the onsite holding area, and transported off site via truck.

WR-4. Noncontact stormwater from the TPP will be collected and directed to an onsite evaporation/percolation basin for stormwater control purposes.

WR-5. Process wastewater from the TPP site will be collected in the onsite holding area and transported off site via truck.

WR-6. Equipment refueling and maintenance during construction will be performed within designated areas in a way that is consistent with best management practices. Spill contingency plans will be prepared and followed.

WR-7. During the construction of the transmission line, existing roads will be used as much as possible.

8.14.5 Applicable Laws, Ordinances, Regulations, and Standards

8.14.5.1 Federal LORS

The federal LORS applicable to the TPP are discussed in this section and are summarized in Table 8.14-3.

Clean Water Act: The Clean Water Act, as amended (Title 40, Code of Federal Regulations [CFR], Parts 112, 122, and 125) has the objective to restore and maintain the chemical, physical, and biological properties of the nation's surface waters. The Clean Water Act authorizes the U.S. Environmental Protection Agency to regulate discharges of wastewater and stormwater into any surface water body by issuing NPDES permits and pretreatment standards. These regulations apply to stormwater and any other point-source discharges released during construction and operation of any industrial activity that disturbs five acres or more.

In California, the administering authority for issuing and enforcing these permits has been delegated to the SWRCB (described below). The Central Valley Regional Water Quality Control Board (CVRWQCB) would issue and have oversight of the General Construction Activity Storm Water Permit for construction of the proposed TPP. The General Industrial Activity Storm Water Permit is not applicable to the operation of the TPP, because contact stormwater from the site would be collected and disposed of off site and would not be allowed to drain according to natural patterns.

Resource Conservation and Recovery Act (RCRA) of 1976, 40 CFR Part 260 et seq: RCRA seeks to prevent surface and ground water contamination by issuing permits and establishing guidelines to track and control the handling and disposal of hazardous waste and hazardous materials.

In California, the administering agency for issuing and enforcing these permits is the California Department of Toxic Substances Control (DTSC). Region I of the DTSC will issue and have oversight of any RCRA permits required for the proposed TPP.

8.14.5.2 State LORS

The state LORS applicable to the TPP are discussed below.

California Constitution, Article 10 Section 2: Article 10 of the California Constitution prohibits waste or unreasonable use of water. The article also regulates the method of use and diversion of water. The administering agency is the SWRCB.

California Environmental Quality Act (CEQA), Public Resources Code § 21000 et seq.; CEQA Guidelines, 14 CCR Section 15000 et seq., Appendix G: CEQA establishes guidelines that define water resources impacts. Appendix G contains definitions of projects that may be considered to cause significant impacts to water resources. The administering agency for the CEQA is the CEC.

California Porter-Cologne Water Quality Control Act (1998); California Water Code Sections 13000–14957, Division 7, Water Quality: The Porter-Cologne Water Quality Control Act authorizes implementation of a statewide program to control the quality of all waters of the state. The act establishes the state and regional water quality control boards as the state agencies with the primary responsibilities for coordinating and controlling water quality. The siting, operation, and closure of waste disposal sites are regulated. The CVRWQCB requires that wastes and disposal sites be classified, and that discharges comply with groundwater protection and monitoring requirements, as set forth in RCRA.

The CEC, the SWRCB, and the CVRWQCB have authority and oversight of water quality issues for the proposed project.

California Water Code Sections 13260–13269; 23 CCR Chapter 9: The Water Code requires that a waste discharge report be filed regarding any waste discharge requirements where a discharge can affect the quality of any waters. The discharge requirements will support enforcement of relevant water quality protection objectives for the Water Quality Control Plan

and applicable federal technology-based effluent standards. The discharge requirements may also incorporate requirements based on the Clean Water Act, Section 402(p) to address construction activities. The administering agency is the CVRWQCB.

California Water Code Sections 13271–13272; 23 CCR Sections 2250–2260: The California Water Code requires that releases of specified quantities of hazardous substances, sewage, or petroleum products be reported if the release is likely to result in discharge to waters of the state. Where the release or threat of discharge affects surface waters, hazardous substances and reportable quantities are defined in 40 CFR Section 116.5 under Section 311(b)(2) of the Clean Water Act. Where the release or threat of discharge affects groundwater, hazardous substances are defined as the substances listed as hazardous under the California Hazardous Waste Control Act, Health and Safety Code Sections 2510 and 2520, and the reportable quantities are those specified in 40 CFR Part 302. Releases of hazardous quantities are not anticipated as a result of operation of the proposed TPP; however, if releases occur, reporting requirements specified in this code would be followed.

The administering agency is the CVRWQCB and the California Office of Emergency Services.

Water Quality Control Policy: Use and Disposal of Inland Waters Used for Power Plant Cooling: The SWRCB requires alternative sources of water to be evaluated when fresh inland waters are used for power plant cooling. Alternative sources must be shown to be environmentally undesirable or economically unsound. The SWRCB also requires an analysis of the impacts that the use of inland waters for power plant cooling will have on Delta outflow and Delta water quality objectives.

California Public Resources Code Section 25523(a); 20 CCR Sections 1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (1): These sections of the Public Resources Code allow the CEC to include requirements to ensure protection of environmental quality in its decision on an AFC. These sections also require information to be submitted to the CEC regarding water resources and water quality protection. The administering agency is the CEC.

8.14.5.3 Local Authorities and Administering Agencies

Resource Conservation District: Soil resource policies, which are intended to maintain agricultural productivity, are administered largely by the Resource Conservation District rather than by San Joaquin County. To avoid increased erosion, recommendations for handling of soil during grading and construction will be obtained from the local Resource Conservation District.

8.14.6 LORS Compliance Strategy

Construction and operation of the proposed TPP, including the plant, the transmission line, the onsite natural gas interconnect, and other associated facilities, would comply with all applicable hydrology and water quality LORS. Application for required notifications and permits would be completed prior to the start of construction. A Notice of Intent would be filed with the CVRWQCB for coverage under the California General Permit for Stormwater Discharges Associated with Construction Activity prior to the start of construction activities at the project site. No additional permit applications pertaining to water resources are necessary.

Proposed conditions of certification are contained in Appendix K. These conditions are proposed in order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less-than-significant levels.

Permit	Agency	Schedule
Notice of Intent	CVRWQCB	3rd Quarter, 2001

8.14.7 Involved Agencies and Agency Contacts

Agency	Contact/Title	Telephone
Central Valley Regional Water Quality Control Board 3614 East Ashlan Avenue Fresno, CA 93726	Doug Patterson, Senior Water Resource Control Engineer	(559) 445-5116
Central Valley Regional Water Quality Control Board 3614 East Ashlan Avenue Fresno, CA 93726	Darrell Evensen, Water Resource Engineer	(559) 445-5910
Department of Public Works, San Joaquin County 1810 East Hazelton Avenue Stockton, CA 95205	Brandon Nategawa	(408) 792-2324
Delta-Mendota Canal Water Authority 14201 S. Highway 33 Santa Nella, CA 95322	Joe Martin	(209) 833-1040
Federal Emergency Management Agency Building 105 Presidio of San Francisco San Francisco, CA 94129	Chris Barkely	(415) 923-7257
Plain View Water District 6715 S. Tracy Boulevard Tracy, CA	Nate Rupert	(209) 835-0375

8.14.8 References

Barkely, Chris, 2001. Personal communication from Chris Barkely, Federal Emergency Management Agency to R. Farre, URS, July.

Durfee, Kevin, 2000. Personal communication from Kevin Durfee, Western Regional Climatic Data Center, to T. Cudzilo, URS/Radian, March.

Martin, Joe, 2001. Personal communication from Joe Martin, Delta-Mendota Water Agency to R. Farre, URS, July.

Nategawa, Brandon, 2001. Personal communication from Brandon Nategawa, San Joaquin County Public Works to R. Farre, URS, July.

San Joaquin County Planning Department, 1998. San Joaquin County General Plan. Updated.

State Water Resources Control Board (SWRCB), 1975. *Water Quality Control Policy: Use and Disposal of Inland Waters Used for Powerplant Cooling.*

U.S. Geological Survey (USGS), 1998. *Environmental Setting of the San Joaquin-Tulare Basins, California.*

U.S. Geological Survey (USGS), 1998. *Water Quality in the San Joaquin-Tulare Basins, California, 1992-95.*

Western Regional Climatic Data Center. Climate information obtained from http://www.wrcc.dri.edu.

Wheeler, Doug, 2000. Personal communication from Doug Wheeler, Vice President, GWF Power Systems Company, Inc., to D. Stein, URS/Radian, April.

TABLES

Table 8.14-1
Monthly Climate Summary at Tracy Carbona
December 1, 1927 to July 31, 2000

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (degrees F)	54.1	61.0	66.7	73.4	80.6	88.1	93.8	92.4	87.9	78.6	64.9	54.7	74.7
Average Min. Temperature (degrees F)	36.7	40.0	42.5	45.6	50.0	54.8	56.8	55.6	53.9	48.7	42.1	36.6	46.9
Average Total Precipitation (in.)	1.93	1.71	1.41	0.84	0.50	0.09	0.03	0.09	0.24	0.53	1.13	1.49	9.99

Note:
Percentages of possible observations for period of record: maximum temperature; 94.9%; minimum temperature, 94.4%; precipitation, 95.8%; snowfall, 97.0%.
Source: Western Regional Climate Center website, 2001.

Table 8.14-2
Surface Water Needs for the Tracy Peaker Project and Quality Parameters of Surface Water Source

Delta-Mendota Canal Pumping Needs of TPP	
Maximum Daily Water Requirements for the TPP	
Flow (gpm)	52
Average Daily Water Requirements for the TPP	
Flow (gpm)	20

Delta-Mendota Canal Water Quality Parameters (unfiltered mg/L unless otherwise indicated)	
Alkalinity, as calcium carbonate[3]	129.3
Conductivity[2]	749.17 µmhos/cm
Hardness, as calcium carbonate[1]	102.00
Total dissolved solids[2]	416.67
Aluminum[2]	1.07
Barium[2]	.053
Cadmium[2]	<0.0001
Calcium[3]	40.7
Chloride[3]	140.0
Chromium[2]	<0.01
Copper[2]	0.0021
Iron[2]	1.25
Lead[2]	<0.001
Manganese[2]	0.116
Magnesium[3]	21.8
Nickel[2]	<0.05
Nitrate[3]	2.1
Selenium[2]	<0.001
Silica[3]	20.0
Sodium[3]	120.0
Sulfate[3]	120.0
Zinc[2]	<0.01
Bromodichloromethane[1]	52.5
Bromoform[1]	3.075
Chloroform[1]	112.8
Dibromocloromethane[1]	22.00

[1] Sampled at O'Neill intake on 1/5/00, 2/3/00, 3/2/00, 4/4/00, 5/3/00, 5/30/00, 7/6/00, 8/2/00, 9/5/00, 10/3/00, 10/31/00, 12/6/00
[2] Sampled at Mile Post 9.87 on 6/23/92, 7/14/92, 8/18/92, 10/9/92, 11/5/92
[3] Reported by the Bureau of Reclamation, 2001
mg/L = milligrams per liter (equivalent to parts per million)
gpm = gallons per minute
µmhos/cm = reciprocal micro ohms per centimeter

Table 8.14-3
Summary of LORS and Compliance for Water Resources

Jurisdiction	Authority	Administering Agency	Requirements & Compliance
Federal	Clean Water Act, 40 CFR Parts 111,122, and 125	RWQCB Central Valley Region (authority deferred from U.S. EPA to RWQCB)	Stormwater management practices during construction must follow best management practices. Completed applications and fees must be submitted prior to construction. Section 8.14.15.1
Federal	Resource Conservation and Recovery Act	California Department of Toxic Substances Control, Region 1	Hazardous material and hazardous waste must be handled, tracked, and reported in conformance with permits issued for the facility. Potential water resources impacts will be monitored through any permits issued. Section 8.14.15.1
State	California Constitution, Article 10, Section 2	RWQCB Central Valley Region	Minimization of consumptive water use through recycling of oil production water; water uses combined where feasible in facility design and process operations. Section 8.14.2 and 8.14.5.2
State	California Porter-Cologne Water Quality Control Act, California Water Code §§ 13000–14957, Division 7, Water Quality	CEC, RWQCB Central Valley Region	Siting, operation, and closure of waste disposal points. Requires submission of waste and site classification for any waste discharge permit required. Section 8.14.5.2
State	CEQA, Public Resources Code Section 2100 et seq.; CEQA Guidelines, 14 CCR § 15000 et seq., Appendix G	CEC	Water resources impacts identified and mitigation measures detailed in this document. Section 8.14.5.2

Table 8.14-3 (continued)
Summary of LORS and Compliance for Water Resources

Jurisdiction	Authority	Administering Agency	Requirements & Compliance
State	California Water Code, Sections 13260–13269; 23 CCR Chapter 9; Sections 13271–13272; 23 CCR Sections 2250–2260	RWQCB Central Valley Region, and California Office of Emergency Services	Construction activity stormwater management will be addressed under the construction activities general permit. Industrial stormwater is exempt from the general permit. Reporting of any accidental leaks or spills related to discharge piping and connections will be conducted in compliance with the Water Code. Section 8.14.5.2 and 8.14.6
State	Water Quality Control Policy: Use and Disposal of Inland Waters Used for Power Plant Cooling	RWQCB Central Valley Region	Evaluation of alternative water sources for cooling water was performed; potential impacts to the Delta were evaluated. Section 8.14.2 and 8.14.5.2
State	California Public Resources Code § 25523(a); 20 CCR §§1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (1)	CEC	Requires AFC to include information on water resources and water quality protection. Section 8.14.15.1

CCR = California Code of Regulations
CEC = California Energy Commission
CFR = Code of Federal Regulations
RWQCB = Regional Water Quality Control Board
CEQA = California Environmental Quality Act

FIGURES

Insert Figure 8.14-1a. Water Balance: Annual Average

Insert Figure 8.14-1b. Water Balance: Maximum Daily